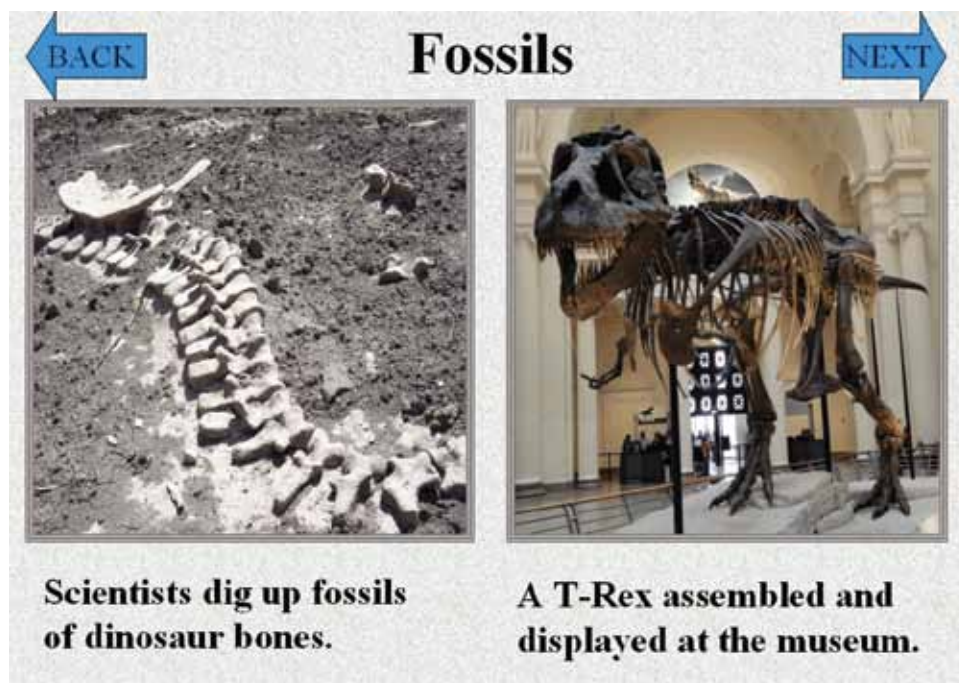


Making and Taking Virtual Field Trips in Pre-K and the Primary Grades



If anything were possible, where would your class like to visit? Would the children like to tour China and learn about its people and their cultures? Maybe a trip to the planets in the solar system would interest the children more? Or perhaps an underwater adventure exploring the lives of whales? Of course, these field trips are not possible—that is, unless you plan and create a virtual field trip.

What is a virtual field trip?

A virtual field trip (VFT) is a technology-based experience that allows children to take an educational journey without leaving the classroom (Cox & Su 2004). These multimedia presentations bring the sights, sounds, and descriptions of distant places to learners (Klemm & Tuthill 2003). Virtual field trips vary in complexity. They can range from a single PowerPoint or video presentation to a multifaceted virtual experience integrating photos, videos, text, audio, video conferencing, and Internet resources.

The VFT learning experience does not replace reality but serves to expose children to experiences they typically cannot have (Cox & Su 2004).

There are two types of VFTs. *Predeveloped VFTs* are available on various Internet sites and cover a wide range of subjects for different grade levels (see “Selected Predeveloped Virtual Field Trip Sites”). Despite their convenience, predeveloped VFTs have some inherent drawbacks. Since they are already designed, they often cannot be edited or modi-

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A study guide for this article is available online at www.naeyc.org/yc.

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fied. Additionally, their websites may close down, change addresses, be under construction, or take too long to download or navigate because of extensive graphics (Tuthill & Klemm 2002). Since teachers cannot control the availability or adapt the content of predeveloped VFTs, it is difficult to ensure that children's specific needs (interest, reading level, appropriateness of content, connection to curricular and educational standards, and degree of technology skills required) will be met (Tuthill & Klemm 2002; NAEYC & Fred Rogers Center 2011). Unless teachers thoroughly examine a predeveloped VFT and determine its appropriateness for all children in their class, it might be best for them to consider using the second VFT type: teacher-created VFTs.

As the name implies, *teacher-created VFTs* are constructed by the classroom teacher and incorporate developmentally appropriate text and technology with quality audio and video media (Zanetis 2010). Teachers can use a variety of software programs (such as PowerPoint, Web-authoring software, MS Word, and video-conferencing technology and software) to develop the VFT and implement it for individual, small group, or large group use. By creating their own VFTs, teachers have greater control over the learning experience and its images, sounds, and text (Zanetis 2010; NAEYC & Fred Rogers Center 2011).

Why use VFTs?

Traditional field trips allow children to discover and expand their social world beyond their family, school, and community. Multisensory, hands-on learning is essential in early education. So why would a classroom teacher want to use a VFT?

Some on-site experiences are not safe, practical, economical, or logistically possible (Cox & Su 2004). Consider the kindergartners who are interested in how snack crackers are made. Visiting a cracker factory with young children may not be feasible because of liability and safety concerns. However, the kindergarten teacher can visit the site to photograph or videotape the factory's various machines and document the processes used to make, bake, and package the crackers (or search for multimedia materials that provide this documentation). In the classroom the children will take a virtual tour of the factory by viewing the photos and videos. The teacher also could invite a factory employee to join the class and describe what the children are seeing and answer their questions.

With the cracker factory VFT, the children have access to an environment that they cannot otherwise visit. This allows them to virtually investigate an area of interest.

Selected Predeveloped Virtual Field Trip Sites

Site	What the site offers	Appropriate for ages/grades
Utah Educational Network www.uen.org/tours	<ul style="list-style-type: none"> • VFTs and links to other VFT websites • Tools for creating VFTs 	K–12
Scholastic www.teacher.scholastic.com/fieldtrp/index.htm	<ul style="list-style-type: none"> • VFTs in reading/language arts, science, social studies, and math • Teacher guides and tips 	K–2
Meet Me at the Corner www.meetmeatthecorner.org	<ul style="list-style-type: none"> • VFTs hosted by children • Instructions for creating VFTs • Directions on how teachers can submit their VFTs for inclusion in the site's repository 	Pre-K and up
PBS Kids www.pbskids.org/rogers/picpic.html	<ul style="list-style-type: none"> • In <i>Mr. Roger's Neighborhood</i> portion of the site, VFT tours of factories demonstrate "How People Make Things" 	Pre-K and up
US government www.whitehouse.gov/about/interactive-tour	<ul style="list-style-type: none"> • Interactive virtual tour of the White House 	Photos: Pre-K and up Text: Intermediate grades
4-H www.sites.ext.vt.edu/virtualfarm/main.html	<ul style="list-style-type: none"> • VFTs exploring the various aspects of horse, beef, dairy, poultry, wheat, and aquaculture farms 	Grades 3–6

When used properly, teacher-created VFTs offer children positive educational experiences.

Additionally, the teacher can plan some engaging post-VFT activities, such as letting the children make, bake, and eat their own crackers—and compare and contrast their methods to those used by the factory.

If educational goals or experiences can be achieved through nontechnological means, children are best served by planning hands-on, developmentally appropriate, and socially engaging activities. However, if the educational goals have practical limitations, VFTs are another tool to help the children acquire knowledge. When used properly, teacher-created VFTs offer children positive educational experiences. Here are some of their benefits:

Alternative option. Traditional field trips are often limited by logistics, expense, safety/liability, time constraints, weather conditions, lack of transportation, overcrowding, lack of volunteers/chaperones, or lack of accessibility for children with special needs (Martin & SeEVERS 2003). In such cases, VFTs can offer children an alternative experience within the confines of their classroom or school (Zanetis 2010). In short, if the children cannot go to the location, teachers can bring the location to the children.

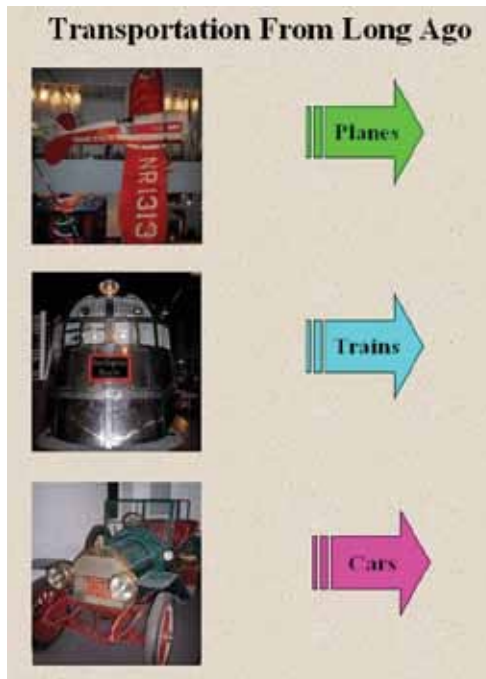
Geographical autonomy. Classroom walls dissolve with the possibilities afforded by VFT experiences. Children can experience outer space, another state or country, a historical figure, and even a different historical time period (Zanetis 2010). With the incorporation of video conferencing technology and software (such as webcams, Skype Video, or Google Mail Video Chat), children can speak to experts or individuals from other locations, such as a factory employee, a zookeeper, or children halfway around the world (Langhorst 2009).

Control. In addition to allowing the teacher to determine what images, text, and sounds the children experience, a VFT can align with state and national early learning standards and technology standards. Consider the second grade teacher whose class is intrigued by lions. As part of the class's long-term study of lions, she plans

a traditional field trip to the zoo so the children can observe them. Once there, however, the class finds that the lions are off exhibit, due to illness. While the children learned about other animals on the field trip, the experience did not achieve the curricular connection the teacher had hoped for. A VFT can resolve this dilemma. Additionally, teachers can tailor VFTs to the developmental needs and interests of the children. By creating VFTs for different learning levels, the teacher can enable children with typical skills and those with advanced skills to receive the same content in ways appropriate for their abilities (Thouvenelle & Bewick 2003).

Accessibility. Not all environments or technologies are accessible to every child. Some children do not have access or exposure to digital technology at home. Some environments have not been adapted to provide access to children with special needs. The same holds true for dual language learners when they encounter environments that are not print or language friendly. By creating a VFT that brings the location to the children, the teacher can ensure that appropriate opportunities, modifications, and accommodations are in place for the inclusion of all children (NAEYC & Fred Rogers Center 2011).

Usability. A VFT can be used in multiple ways. The teacher can use it to prepare the children for an actual experience (such as a visit to a farm) or as a post-trip review of content that supports children's memory and retention skills. Teachers can update VFTs as the children advance in their understanding of the subject. VFTs also can be shared with other classrooms or schools, thus promoting a different kind of cooperative experience.



Planning and using a VFT

VFTs are not intended to be stand-alone activities but are to be integrated into a fully developed hands-on curricular experience. In fact, VFTs should differ from traditional field trips only in the way they are delivered (via technology), not in the way they are created and used (Zanetis 2010). When planning a VFT, determine how it will fit into the curriculum and what pre- and post-trip activities will enhance children's learning. Ask the children where or whom they would like to visit, what they currently know about the topic, and what they want to learn about the topic. Consider children's developmental and learning needs and skills

as well as their interests (Kisiel 2006; Nabors, Edwards, & Murray 2009).

Based on the children's responses, abilities, and needs, draft an outline of what the VFT should include and how it will be organized (see "Planning Outline for a Virtual Field Trip to a Farm"). Start by locating and gathering developmentally appropriate photos, video clips, and/or audio recordings from your personal collection or online sources (for example, Internet, United Streaming Video, YouTube) (Everhart 2009). You may need to digitize (scan and upload) media materials before incorporating them into the VFT. Choose a software program (for example, PowerPoint, Web-authoring software such as Adobe Dreamweaver, or MS Word) and import the media, create appropriate text, and organize the materials into an interactive format appropriate for the children's age group and technological abilities.

If a video conference is planned, conduct a practice chat with another participant, such as an expert on the topic, so

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that no glitches or connection problems will interfere with the children's learning (Langhorst 2009). Navigate through the finished VFT to ensure that it is fully functioning (for example, that images load and audio and video content play). Finally, in preparation for the VFT experience, send home a note informing family members of the "trip" and inviting them to participate as "chaperones."

Once you have introduced the content to be delivered through the VFT, children can begin navigating and exploring the VFT. Encourage them to work at their own pace, stressing that they do not have to complete the entire VFT all at once. As with any traditional field trip, the children should not be expected to wander alone. Children have more meaningful learning experiences when an adult is available to answer questions, guide and extend learning, or fix any technological glitches (Everhart 2009).

Planning and implementing post-VFT activities are critical aspects of the learning experience. The VFT is a launching point for children to extend and expand what they have just learned to the physical world (Zanetis 2010). Effective post-VFT activities are hands-on and creative. Provide books, materials, and props that children can use to reenact and build on the VFT. They might paint, draw, make clay figures, build block structures, write and illustrate stories, engage in dramatic play, or communicate their experiences to others (Klemm & Tuthill 2003; Everhart 2009). Such activities reinforce learning and encourage children to apply and generalize the knowledge gained from the VFT to the real world.

Teacher-created VFTs can be used in conjunction with traditional field trips. For example, before an actual field trip, a VFT can motivate the children; draw their attention to relevant objects, sites, and people; or involve them in planning for the visit. Teacher-created VFTs also can serve as a summative experience for a traditional field trip. For example, when children return from a visit

Planning Outline for a Virtual Field Trip to a Farm

Opening

Title and audio clip of "Old McDonald Had a Farm"

Barn

- Photos of farm equipment, with simple text
- Video clips of planting, tending, and harvesting crops
- Photos of how hay, grains, and produce are stored, with simple text
- Photos of wild animals in the barn (such as owls, mice, spiders)
- Video clips of barn dancing and hayrides

Stable

- Photos of farm animals (such as horses, cows, pigs) with accompanying audio clips of their appropriate sounds
- Photos of animals being fed, with simple text
- Video clips of milking (both manually and mechanically)
- Video clip of chicken incubation and hatching
- Video clip of sheep shearing and wool processing

Pond

- Photos of aquatic plants and animals (for example, fish, frogs, ducks, dragonflies, crickets, reeds, algae)
- Video clip on the life cycle of the frog
- Photos of the pond in the different seasons, with simple text
- Audio clip of night sounds of the pond (wind, crickets, frogs)



to the zoo, help them use the photos or videos taken on the trip to create a VFT documenting the experience. This requires them to rely on their memory and their recall skills. Share the VFT with others—especially the children’s families—in either digital format or print (for those without access to technology). Sharing fosters positive home and school connections and allows family members who could not attend the actual trip to take part in the educational experience and support their child’s learning.



materials for the children in their class and to create VFTs. Children also need some technology skills to use VFTs appropriately (Thouvenille & Bewick 2003). Because not all children are exposed to technology at home, the class may have varying levels of technological abilities. Teachers and children alike need proper training, support, and time to develop and improve technology skills.

Limitations of VFTs

Teacher-created VFTs are not without their limitations. Be sure to consider and address the following concerns:

Improper use. VFTs cannot, and should not, replace actual field trips, nor should they be used just to apply technology. Integrate VFTs into developmentally appropriate lessons or studies by providing nontechnological pre- and post-VFT activities and allowing time for the children to apply their learning through self-directed, hands-on means. When VFTs are used as substitutes for active engagement or are not integrated into the larger curricular context, they can limit the children’s multisensory and social learning experiences.

Accessibility. To use VFTs effectively, children need access to technology—and not all early childhood classrooms or homes are technologically equipped. Even classrooms with technology may not have enough resources for use by all children or they may not be equipped with assistive or language-related technology (such as adapted keyboards, switches, or translation software) for children with special needs or those who are dual language learners. Children need appropriate exposure to technology to help prepare them for today’s technological society (NAEYC & Fred Rogers Center 2011).

Skills. Even though technology permeates the world, some teachers and children lack technological skills. Teachers need to be technology and media literate to evaluate the appropriateness of predeveloped VFT multimedia mate-

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Conclusion

Like any other educational strategy, virtual field trips have their benefits and limitations. Best practices for using VFTs are similar to best practices for any other effective early childhood activity: they require proper planning, include constructive and cooperative learning, ask and answer questions, encourage children to problem solve, include and engage all children, connect to the curriculum, and provide a range of experiences that allow children to use and build new skills. VFTs will never replace the real thing. But by using them as a complement to traditional early childhood materials and methods, teachers can provide a vehicle for children to pursue their interests, broaden their learning, and expand their social worlds well beyond the confines of the classroom, community, or even a moment in time.

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